Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
The Effect of Foreign Mobile Termination Rates On U.S. Customers	)	IB Docket No. 04-398
	)	
	)	

To: The Commission

COMMENTS OF VODAFONE

ON NOTICE OF INQUIRY

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Summary

Vodafone welcomes the opportunity to comment on the Commission's Notice of Inquiry and submits that:

- Calls from American consumers to foreign mobiles represent less than 1 percent of all the calls terminated by foreign mobile networks, despite the rapid growth in absolute volumes from the United States. Yet there is no evidence that US callers or American carriers are being exploited by foreign mobile operators as a result of any consequential lack of bargaining power;

- On the contrary, there are formidable legal and commercial safeguards prohibiting discrimination against US interests by foreign mobile operators;

- If US callers to foreign mobiles do not face unfavorable treatment, it is difficult to see what role arises for the FCC regarding foreign mobile call termination rates. This is an issue on which foreign regulators are both competent to act and have been doing so, often for many years before the FCC commenced its inquiries;

- The methodology and data required to assess 'reasonable' mobile termination rates are controversial, complex and market specific. But there are no easy generally applicable alternatives. In particular, the FCC should reject AT&T's crude 'revised TCP methodology' as wholly inappropriate in this context; and

- US callers may still be vulnerable to exploitation relative to their foreign counterparts because they access the foreign mobile network through an international 'intermediary' market, whereas their foreign counterparts do not. This intermediary market may not function well. In particular, different time of day and different mobile network rates within a single national market may reduce transparency and allow carriers to exploit the resulting complexity to the detriment of US consumers.

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Vodafone Group Plc and Vodafone Americas, Inc. (together, 'Vodafone') welcome the opportunity to comment on the FCC Notice of Inquiry ('NOI').[1] As the world's largest mobile communications company, with interests in both the United States (through Verizon Wireless)[2] and outside it, Vodafone believes it is well placed to comment on recent developments in many foreign mobile markets to which US consumers make calls.

I. INTRODUCTION

Vodafone previously provided the FCC with comments on many of the issues that are addressed in the NOI.[3] This submission is therefore intended to supplement and update those comments.[4] At the outset, it should be noted that in calling party pays

[1] *In the Matter of The Effect of Foreign Mobile Termination Rates On U.S. Customers*, Notice of Inquiry, IB Docket No. 04-398, FCC 04-247 (rel. Oct. 26, 2004).
[2] Vodafone holds a 44.2 percent interest in Verizon Wireless.
[3] *See* Vodafone Comments and Reply Comments in IB Docket No. 02-324.
[4] In addition, we submit extensive annexes, to which the FCC may wish to refer to consider particular issues raised in our main submission in more detail. These annexes constitute what, in Vodafone's experience over the past decade, are the most important contributions to the ongoing debate on mobile termination rates.

('CPP') markets, termination charges are levied in a different manner than in receiving party pays ('RPP') markets such as the United States. Assessing the appropriate level of mobile termination rates in CPP markets is complex, and comparing interconnect rates for RPP pricing structures with those used in foreign CPP markets, or using other forms of benchmarking, is no substitute.

The FCC is well aware that the appropriate regulatory consideration of foreign mobile termination rates is a matter of considerable controversy to which very considerable resources have been devoted over the past decade. Our aim in this submission is, first, to consider why the issue of foreign mobile termination rates should be the source of such interest in the United States and thereby place the issues, and the role of the FCC, in a proper context.

Next we provide an overview of the way in which foreign regulators have approached their task in regulating mobile termination rates.

Third, we explain why the AT&T 'revised TCP' proxy model can provide the FCC with no assistance in this context.

Fourth, we consider other topics in the NOI and address why they raise no substantive relevance to the FCC's concerns for the interests of US consumers. These issues include on-net/off-net price differentials and the position of foreign integrated carriers.

Finally, we consider the 'intermediary market,' which is comprised of both US interexchange carriers and foreign fixed operators involved in conveying a US call to a foreign mobile network operator. We show that this market appears to be working imperfectly and that movements in mobile termination rates may not always translate into movements in prices faced by other wholesale or retail customers. We highlight the fact that many foreign regulators allow mobile operators within the same foreign market to nonetheless charge different termination rates and argue that this reduces

transparency in the intermediary market (as well as being objectionable on other grounds).

II. THE NOTICE OF INQUIRY NEEDS TO BE UNDERSTOOD IN CONTEXT

The FCC and other US agencies have received representations from US carriers and other interested parties for a number of years on the matter of 'foreign mobile termination charges.' Vodafone believes it is important to understand why this is so and to place the current debate in its proper context. Concerns on the part of US carriers regarding charges levied by foreign mobile operators have arisen because of two principal developments: (1) changes in international accounting rate structures and, specifically, the replacement of 'averaged' accounting rates with 'de-averaged' rates that separate rates for calls to foreign mobile operators from calls to foreign fixed operators; and (2) the growth in US-originated traffic that is terminating on foreign mobile networks.

A. De-Averaging of International Settlement Rates Is Consistent With the FCC's Policy of Transparency and Does Not Appear to be a Contentious Issue for US Carriers

As evidence recently submitted by Comptel/Ascent to the United States Trade Representative demonstrates,[5] US carriers have faced changes in international accounting rates that have resulted in a de-averaging of prices for services that heretofore had been averaged or 'blended.' Previously, US carriers paid a single accounting rate for all traffic to a foreign country, irrespective of whether the destination network was a fixed or a mobile operator. It is important, therefore, to understand why 'de-averaging' has occurred.

As with many cases of 'bundling,' the lack of price transparency inherent in accounting rate 'averaging' had a number of unattractive properties. The most obvious of these was that it distorted consumption. This practice, however, also created

[5] *See* Comptel/Ascent, United States Trade Representative Section 1377 Report, at 4 (Dec. 17, 2004).

opportunities for US carriers to exploit arbitrage opportunities that arose between bundled and unbundled services. Specifically, the practice of 'tromboning,' which arose in the mid- to late-1990s, allowed US and other foreign carriers to refile domestically originated traffic within foreign markets (which would normally attract a full domestic termination rate when delivered to the foreign mobile operator) and to re-terminate it as 'foreign'- (often US-) originated traffic at the lower international accounting rate. The consequence of this activity was, first, that US carriers did not face the full costs of foreign mobile termination during this period – and relatively little interest was shown in this issue by US carriers or by US agencies. But, second, it also meant that foreign carriers began to handle growing and unanticipated volumes of traffic that terminated on foreign mobile networks. These costs were either not reflected in the assumptions underpinning the accounting rate itself (in which case the foreign carrier carried the losses from such refile activity) or were carried by the mobile operators themselves (who were unable to recover their full costs from the foreign international carrier).[6]

It is probably impossible to determine the nature or magnitude of any cross-subsidies that arose as a result of accounting rate averaging in this context. It is arguable that some foreign callers to mobiles – those using carriers that 'tromboned' traffic – were effectively subsidized by other foreign callers who used carriers facing a domestic termination rate. Alternatively, lower costs may not have been passed on to customers at all, resulting in subsidies between domestic and international carriers. It is, however, very difficult to see any circumstances under which it could be suggested that US callers to foreign mobiles were subsidizing foreign mobile users during this period and it is very likely that the opposite was in fact the case. In markets where accounting

[6] *See* Organization for Economic Co-Operation and Development (OECD), *Cellular Mobile Pricing Structures and Trends*, DSTI/ICCP/TISP(99)11/FINAL, at 53 (May 2000) (discussion of 'tromboning').

rates remain below domestic fixed to mobile calling costs – as remains the case at present in Japan – it is arguable that such arrangements still discriminate *in favor* of US consumers.

Such arrangements were sustainable while calls to mobiles were low in volume, but by the late 1990s it became clear that change was necessary. Indeed, foreign carriers moved consistently towards 'de-averaging' accounting rates even though they had to overcome the challenges of reconfiguring billing systems and entering into new commercial arrangements. Arbitrage opportunities of the kind described above may still exist for US carriers but there is no doubt that they are much less significant than was the case in the past.[7]

B. The Fact that Some New 'De-Averaged' Mobile Rates Are Higher than Old 'Averaged' Rates Is Not Evidence of Unreasonable Charges or Discrimination

Any move from averaged to de-averaged prices is likely to result in an increase in some perceived prices and a reduction in others – but the impact on overall costs is much more uncertain. In this case, de-averaged accounting rates for calls to mobiles are generally higher than the averaged international accounting rate that US carriers previously faced. This does not mean that foreign mobile termination rates have risen – the evidence available to Vodafone (see Annex B) shows that mobile rates have been falling consistently in all major markets. Nor does it mean that the foreign mobile termination rates embodied in the de-averaged accounting rates were higher than the domestic termination rates or that total costs have increased for US carriers.[8] It does

[7] New forms of arbitrage have arisen to exploit other rate differences and averaging. For example, some US carriers are believed to use 'SIMboxes' to terminate US-originated international traffic on foreign mobile networks. SIMboxes allow carriers to refile traffic as domestic on-net mobile-mobile calls, which can be priced below the foreign mobile termination rate.

[8] The issue of non-discrimination is discussed further in this submission, including a detailed annex on non-discrimination regulatory obligations in selected countries, *see* Annex D.

mean that US carriers now face more transparent and accurate pricing signals than they did when rates were averaged.

Vodafone notes that no US carrier appears to oppose 'de-averaging' of accounting rates in principle. Respondents may object to the level of particular rates that resulted from this process, but this cannot be an objection to de-averaging as such. The FCC, moreover, generally favors transparent pricing signals that properly reveal the costs of consumption to consumers, as demonstrated by the Commission's reform of its access charge regime.[9]

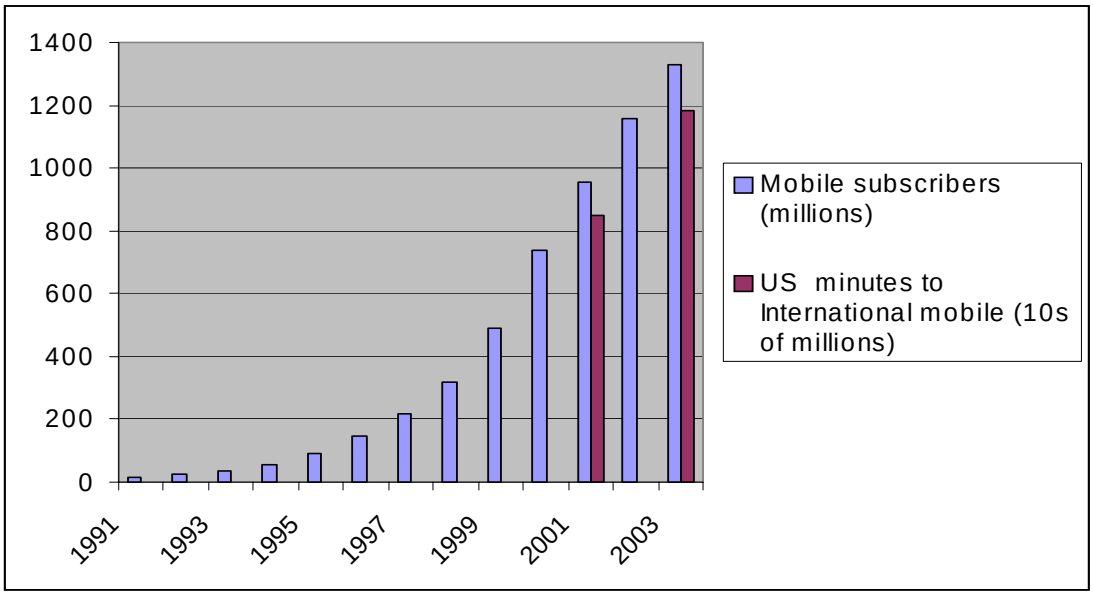
C. US Consumers Have Benefited Enormously from the Growth of Foreign Mobiles – as Evidenced by their Calling Volumes

The evidence demonstrates a growing volume of calls originating from US consumers terminating on foreign mobile networks. The principal driver for this growth appears to be the growth in foreign mobile subscriptions in both developed and developing markets – in many markets due in large part to the CPP structure - although other factors such as falling prices and social trends are also relevant (see figure 2.1).

Call volumes have continued to grow strongly throughout the period when accounting rates were 'de-averaged.' Such growth demonstrates that US consumers have benefited enormously from the growth of foreign mobile networks – 'de-averaged' foreign termination rates do not appear to be constraining or choking consumption on the part of US callers.

[9] *See, e.g., Access Charge Reform, Price Cap Performance Review for Local Exchange Carriers, et al.,* First Report & Order, 12 FCC Rcd 15982, 15992-93 (1997). Indeed, the creation and gradual increase of the Subscriber Line Charge ('SLC') was designed to achieve precisely these goals. *See id.* at 15998-16000.

Figure 2.1: Growth in mobile subscriptions (1991-2003) and growth in US-originated calls to international mobiles (2001 and 2003)



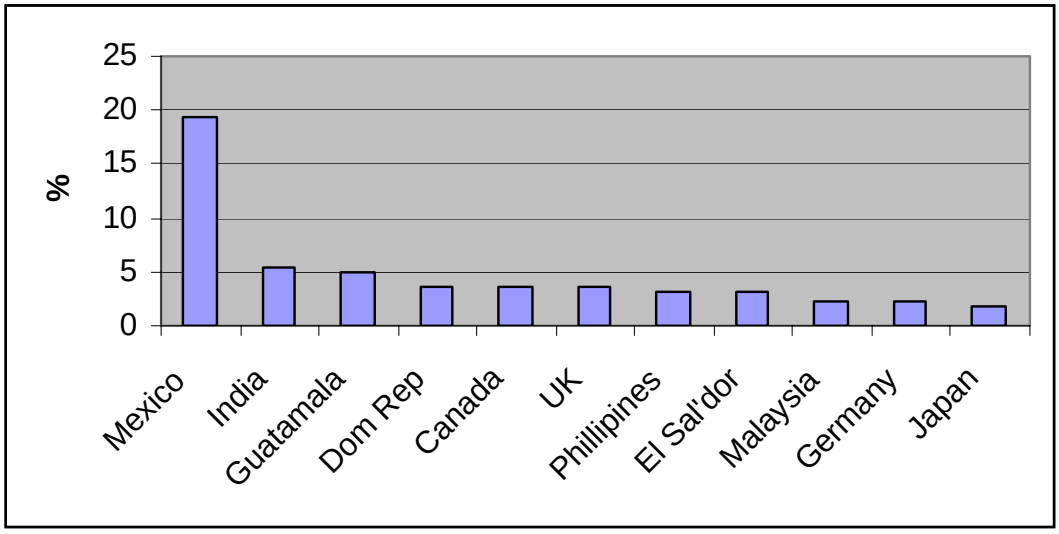
Source: ITU (www.itu.int/ITU-D/ict/statistics/at_glance/KeyTelecom99.html) and TeleGeography.

The growth of US- and other internationally originated traffic has been accompanied by similar rates of growth in domestically originated traffic that terminates on foreign mobile networks. The vast majority of calls terminating on foreign mobile networks continue to be originated from the market in which the network itself operates (on average over 95 percent in Europe, based on Vodafone internal data). Internationally originated traffic still represents a very small proportion of total traffic terminated on mobile networks (we estimate that total international-originated traffic represents around 5 percent of total traffic in Europe and much less in Japan). US-originated traffic represents a small proportion of that in most cases. We estimate that calls originating from fixed lines in the United States account for less than 0.5 percent of all calls to mobile in Europe.[10]

[10] US calls to foreign mobiles accounted for 23 percent of all international-originated traffic to mobiles in 2003 but only 9 percent of international-originated calls to mobile in Europe. Analysis Commissioned by Vodafone from TeleGeography, January 2005. The TeleGeography research data did not collect data on mobile-originated traffic.

Moreover, much U.S. traffic terminating on foreign mobile networks is concentrated in comparatively few markets, most of which are either RPP regimes or CPP markets where regulators are taking actions to lower foreign mobile termination rates. Figure 2.2 shows the top 11 destinations for US-originated traffic to foreign mobiles. Calls to Canada and Mexico account for approximately 23 percent of total volumes. Calls to major European destinations such as the UK and Germany, as well as Italy, Spain and France and France (all from outside the top 11), account for 9 percent. These European markets have all adopted a CPP system and all are subject to significant regulatory oversight of mobile termination rates. Japan is an important destination, but an unusual market in which rates levied for calls originating outside of Japan are in fact substantially lower than those levied within Japan itself.[11]

Figure 2.2: Percentage of US International Traffic terminated on Mobile networks in the selected countries (Top 11), 2003



Source: Analysis Commissioned by Vodafone from TeleGeography, January 2005

[11] Vodafone has no experience with the Philippines, Dominican Republic, El Salvador, Guatemalan or Brazilian markets, while we no longer have any interests in Mexico or India, all of which are significant destinations for US-originated calls to mobiles.

D. US Consumers and Carriers Account for a Small Proportion of Foreign Mobile Terminated Traffic – But Their Interests Are Aligned with the Other Buyers of Termination on Foreign Mobile Networks

Since over 95 percent of the costs of terminating traffic on foreign mobile networks have been borne and are likely to continue to be borne by domestic fixed and mobile customers in those foreign countries, the position of US consumers in calling foreign mobiles could be problematic. Vodafone considers that this could be a legitimate concern if the incentives of US carriers and those of foreign fixed carriers, both of whom buy mobile termination services from foreign mobile operators, were to differ -- but they do not.

Foreign fixed carriers have long complained about the level of foreign mobile termination rates. Their incentives – to lower the costs of calling mobiles – are wholly aligned with those of US carriers.[12] Likewise, the interests of foreign callers to mobiles also are aligned with those of US callers.

Since *incentives* between foreign and US carriers appear aligned in this case, the only remaining concern for the FCC must be whether the *outcomes* achieved by foreign regulators are denied to US carriers and US consumers – *i.e.* whether market outcomes discriminate against US callers to foreign mobiles.

E. Foreign Mobile Operators Have No Ability to Discriminate Against US Callers and Carriers

As Annex D shows in more detail, almost all of the regulatory and legal environments with which Vodafone is familiar expressly prohibit discrimination by reference to the origin of a call (and thereby mirror the WTO undertakings of most markets). In Japan, for example, Article 6 of the Telecommunications Business Law imposes a general obligation on all telecommunications carriers not to 'discriminate

[12] This is not surprising since in many cases US carriers are present as domestic carriers in foreign markets. The Commission needs to distinguish between the role of US carriers in

unfairly in providing telecommunications services.'[13] In Europe, communications-specific legislation provides regulators with powers to impose non-discrimination obligations on operators that have been determined to have significant market power in defined relevant markets. This applies to both national and cross-border interconnection. The European Commission expressly noted that the cost of conveying a call from a point to interconnection to its destination on the terminating fixed network was independent of the origin of the call.[14] In addition, the European Commission has also stated that:

> …there should be no differentiation in interconnection tariffs for call termination between a 'foreign' operator and a 'home country' operator for the same call termination services ….[15]

Vodafone has itself been a strong advocate within the ITU (in Study Group 3) for including a non-discrimination obligation for domestic and international calls to mobiles.[16] Non-discrimination obligations are also long-standing features of conventional antitrust analysis in most foreign jurisdictions.

Even were this not the case, practical limitations would nonetheless make it impossible for a foreign mobile operator to discriminate against US carriers by charging a higher termination rate to a foreign carrier for traffic that originates in the US or otherwise internationally than it charges for traffic which originates domestically. Any attempt to price discriminate in this way would undoubtedly create opportunities for arbitrage for US carriers (provided some degree of competition existed within the foreign market). Vodafone has no evidence to suggest that such discrimination exists in the

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providing interexchange service to US consumers and the role of US carrier affiliates in offering retail service in foreign markets to foreign consumers.

[13] Ministry of Internal Affairs and Communications, Japan, Law No. 86 of December 25, 1984 as amended last by Law No. 125 of July 24, 2003, *available at* http://www.soumu.go.jp/joho_tsusin/eng/Resources/laws/ 2001TBL.pdf ['Japanese Law No. 86'].

[14] *See European Commission Communication on interconnection of mobile operators*, Official Journal of the European Communities, OJ C 84, 19.03 at p. 3, section 5.1.1 (1998).

markets in which it operates (which constitute some of the major markets for US-originated calls to mobiles). We also note that no firm evidence appears to have been presented to the FCC to date to suggest such discrimination is prevalent.

In the absence of discrimination as to the outcomes from regulatory or other commercial proceedings, the interests of US consumers will be fully safeguarded by the actions undertaken by regulators within the foreign markets. The next section of this document therefore addresses those actions.

III. REGULATION HAS DRIVEN REDUCTIONS OF FOREIGN MOBILE CALL TERMINATION RATES IN ALL MAJOR CPP MARKETS

Regulators in markets in which Vodafone operates have been applying regulatory pressure to mobile termination rates for a number of years. The impact of this action has been a steady reduction in the level of these rates (see Table 3.1).

Table 3.1: Cumulative percentage reductions in mobile termination rates, 1999 to 2005, Selected countries.[17]

Country	***Annual average reduction (1999-2005)***	***Cumulative reduction (1999 to 2005)***
Austria	5%	24%
Belgium	5%	26%
France	14%	58%
Germany (from 2000)	4%	19%
Greece	11%	51%
Ireland	5%	26%
Italy	10%	46%
Netherlands	10%	45%
Portugal	8%	38%
Spain	9%	44%
Sweden	13%	55%
UK	12%	54%
Switzerland	3%	17%
Japan	2%	10%
New Zealand	14%	59%
Australia (from 2003)	10%	14%

[15] *Cross-border interconnection in the EU*, Official Journal of the European Communities, ONP Committee, ONPCOM99-11, at 2, (Mar. 16, 1999).
[16] *See* Annex D *discussing* Vodafone proposals in Study Group 3.

Specifically, most European markets have now introduced new legislation and have completed – or are in the process of completing - their market reviews of call termination.[18] The new European telecommunications framework of 2002 required European regulators to define markets and to determine whether operators held 'Significant Market Power' ('SMP') within those markets. The most significant result of this is that instead of only one or two mobile operators being determined to have SMP in a particular market – the outcome under the 'old' framework – all mobile operators within a particular national market are now generally found to have SMP in mobile call termination[19] and therefore to be subject to regulatory intervention. An important consequence, therefore, of the new EU regulatory framework has been that it serves to *extend* regulation of mobile call termination rates to all European operators. The regulator in Australia has adopted a similar approach[20] and a similar proposal is proposed in New Zealand.[21]

The new European framework obliges regulators to impose at least one remedy upon a firm that is found to have SMP. In practice, all regulators in Europe and in Asia Pacific have imposed non-discrimination obligations (see Annex D for case studies for selected countries) and have, in addition, required all mobile operators to set prices

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[17] *See* Annex B.

[18] *See* Commission of the European Communities, *European Electronic Communications Regulation and Markets 2004 (10th report)*, Staff paper no. 1, at 6 (2004).

[19] This goes so far as to include mobile operators who have yet to establish operations within a particular market. Thus, for example, Comreg, the Irish regulator, has determined that '3', a new entrant 3G operator which has yet to launch commercial services, nonetheless holds SMP in the call termination market. Vodafone understands that '3' is appealing this conclusion.

[20] *See* Australian Consumer and Competition Commission, *Mobile Services Review Terminating Access Service*, *Final Decision on whether or not the Commission should extend, vary or revoke its existing declaration of the mobile terminating access service* (2004) *available at* http://www.accc.gov.au/content/index.phtml/itemId/520596.

[21] *See* New Zealand Commerce Commission, *Telecommunications Act 2001: Schedule 3 Investigation Into Regulation of Mobile Termination*, Draft Report (Oct. 18, 2004) *available at* http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/Investigations/MobileTerminationRates/reportsandsubmissions.aspx ['New Zealand Draft Determination'].

which are 'cost orientated' and reasonable. We consider in the next section how cost orientation should be assessed.

IV. DETERMINING THE APPROPRIATE FRAMEWORK TO ASSESS FOREIGN MOBILE CALL TERMINATION IS A COMPLEX UNDERTAKING

A. RPP Does Not Provide a Meaningful Benchmark for Assessing CPP Pricing

The first point to note in any assessment of 'cost orientation' in CPP environments is that rates charged by US mobile operators provide no guidance. The NOI asks two key questions in relation to the distinction between CPP regimes that characterize many (but not all) foreign mobile markets and the RPP regime that characterizes the United States mobile market (and some other foreign markets).

The first question is whether prices that are derived in RPP environments provide useful proxies for determining 'cost orientated,' 'fair' or 'reasonable' charges under CPP environments.[22] The NOI cites calculations made by US mobile carriers (*e.g*. Sprint at 3.9 cents/minute to receive calls) to contrast with termination rates levied by European mobile operators that are several times higher.[23] Leaving aside deficiencies in the cost modelling approach adopted for mobile charges by Sprint, the implication to be drawn from this comparison is presumably that European termination rates are 'too high' by

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[22] *See* NOI at ¶ 9.

[23] See NOI at ¶ 37 n. 107, *citing* Sprint, and Analysys, Ltd., a U.K. consultancy, on the cost of mobile termination in various countries. *See* New York Public Service Commission, *Petition of Sprint Spectrum, L.P. d/b/a Sprint PCS Pursuant to 225(b) of the Telecommunications Act of 1996 to Establish an Intercarrier Agreement with Verizon New York, Inc.,* Case 01-C-0767, Order on Petition for Rehearing, December 3, 2002, at 2 (arguing that, based on a detailed LRIC study it submitted to the PSC, the cost for terminating one minute of traffic on its mobile network in New York should be $US 0.039 per minute). *See* Florida Public Service Commission, *In re: Petition of Sprint Spectrum, L.P. d/b/a Sprint PCS for Arbitration of Certain Terms and Conditions of a Proposed Agreement with BellSouth Telecommunications, Inc. Pursuant to 225 of the Telecommunications Act,* Docket No. 000761-TP, Prehearing Order, Order No. PSC-00-2535-PHO-TP, December 28, 2000, at 9 (arguing that, based on its cost study, the LRIC rate should be approximately $US 0.066 per minute). Analysys developed a LRIC model for Oftel as part of Oftel's review of charge controls on calls to mobile phones during 2000 and 2001. *See* Analysys, *The LRIC Model of UK Mobile Network Costs* (2002), *available at* http://research.analysys.com/. .

virtue of being significantly higher than the charges levied by US mobile operators to receive calls.

Such price comparisons are not meaningful. RPP and CPP environments will produce a radically different structure of prices and volumes, even if the modelling assumes identical costs, identical demand conditions and normal profits in both cases. This is simply because there are both substantial fixed costs in mobile businesses and substantial differences in the demand for subscription, for making calls to mobiles, for receiving calls on mobiles and for making calls from mobiles. Pricing structures in each case will therefore differ substantially, even if all other conditions are held constant. Broadly, RPP regimes will produce higher subscription charges, lower penetration, lower call charges and higher calling volumes. All of these are characteristics of the US mobile market. CPP will produce lower subscription charges, higher penetration, higher calling charges and lower volumes. Consumer welfare is similar in both models.

The FCC cannot infer anything meaningful about optimal pricing under CPP regimes from observations in RPP environments.

The second question is whether RPP is in some sense a more desirable pricing framework than the CPP structure that prevails in many foreign markets.[24] Vodafone submits that this question must be beyond the purview of this NOI and contends that there is no prospect of foreign regulators mandating a transition from CPP to RPP, even if the FCC were to find that there would be substantial benefits in doing so. In practice, Vodafone believes that the theoretical merits of any transition are ambiguous and the practical costs of doing so are very substantial. Vodafone notes that the trend in foreign

[24] *See NOI* at ¶ 9.

markets has been for a transition from RPP to CPP, as in Mexico, Chile, Argentina, Czech Republic, and Israel.[25] There have been no moves in the reverse direction.

B. Call Termination is not a Separate 'Service' – But Part of the Bundle of Services that Foreign Mobile Operators Provide in an Offering

Most foreign regulators have begun their consideration of the issue of mobile call termination rates by undertaking an exercise in market definition.[26] For example, the UK Competition Commission considered that there were three services provided by foreign mobile operators. The first was 'access' – that is, defined as allowing the customer to gain access to a mobile network or otherwise to have the capability of making and receiving calls. The second was 'call origination,' which is the initiation of a call to another party, either on the same network or another network. The third was 'call termination,' which is the delivery of calls to mobile customers. The first two services are supplied to the mobile phone customer and occur at the retail level. The third, call termination, occurs at the wholesale level and is supplied by the mobile operator to the network operator of the calling party (or to some intermediary). Hence mobile call termination is subject to 'derived demand' from the fixed to mobile retail market.

These basic characteristics of the conditions of mobile service supply have significant implications for the debate about mobile termination rate setting. The first point to note is that foreign mobile operators, in common with fixed operators and with US mobile operators, provide services to at least two types of customer – those whom they serve directly as their retail subscribers and those who are served by other

[25] Vodafone's response to the costing methodology proposed by AT&T is discussed in detail later in this submission.

[26] Regulators in Europe have tended to apply standard competition law principles when seeking to define markets and indeed, under the new EU regulatory framework, they are obliged to do so. *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic networks and services*, Official Journal of the European Communities, OJ 2002 C 165/3 (2002) *available at* europa.eu.int/servlet/portail/RenderServlet?search=RefPub&lg=en&nb_docs=25&domain=Legislation&in_force=NO&year=2002&month=7&day=11&coll=JOC&nu_jo=165&page=6.

operators but who wish to call these subscribers (and who create the derived demand for mobile termination services which are then bought by interconnecting operators on their behalf). It is highly probable that the demand characteristics of these different types of customers will differ – callers originating calls from mobile phones may face very different constraints and have different needs than those calling mobile phones. This has implications for the recovery of costs and the setting of prices as between these different types of customer. [27]

C. The Determination of 'Fair and Reasonable' Mobile Termination Rates, When Provided in CPP Environments with Multiple Services, is Controversial and Complex

Foreign regulatory agencies have adopted a number of approaches in setting 'cost orientated' or reasonable mobile termination rates.

Differences in approach between different markets are more likely to be explained not by differences in philosophy or objectives, but by differences in the relative development of cost modelling capabilities within the respective markets. Regulators who adopt fully allocated cost methodologies or benchmarking to determine 'cost orientated' mobile termination rates generally do so in the absence of more sophisticated means rather than in preference to them. Among foreign regulators of whom Vodafone is aware, only the Australian regulator has in the past adopted an alternative remedy to regulating mobile termination through the use of a 'tracking' mechanism**,** and that intervention sought not to set initial 'cost orientated' rate but simply to regulate subsequent movements in rates over time.[28]

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[27] *See* Annex C (papers discussing market definition issues).
[28] *See* Australian Competition and Consumer Commission, *Mobiles Services Review: Terminating Access Service*, at 5-6 (2004) *available at* http://www.accc.gov.au/content/index.phtml/itemId/520596.

As with fixed interconnection rate setting, there is a general agreement among European regulatory agencies that mobile termination rates should be set in reference to Long Run Incremental Cost ('LRIC') standard.[29]

D. LRIC Modelling in the Mobile Context is Different from LRIC Modelling in Fixed

While LRIC cost modelling has been used in fixed telecommunication networks for many years in both the United States and abroad, its use to determine the costs of mobile services is more recent in many foreign markets and relatively underdeveloped in the United States itself. Many of the key methodological issues are still the focus of debate between regulators and industry. The UK Competition Commission observed that '[d]eveloping LRIC models is difficult' and further, 'because the method is relatively untested in mobile networks, there is no consensus yet on how an LRIC model should be built…'[30]

Indeed, the application of LRIC methods to a mobile network entails additional challenges and complexities distinct from traditional LRIC modelling for fixed networks. Many of these have been discussed in both Europe[31] and the United States.[32] For example, in mobile networks there are significant differences in routing and network component usage between incoming and outgoing calls. For incoming calls, mobile subscribers need to be located and the call routed to them anywhere on the network.

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[29] *See* European Regulators Group, *ERG Common Position on the approach to Appropriate Remedies in the New Regulatory Framework*, [ERG (03) 30rev1] (2003); International Regulatory Group, *Principles of Implementation and Best Practice on the Application of Remedies in the Voice Call Termination Market* (2004) *available at* http://irgis.icp.pt/admin/attachs/384.pdf.

[30] Mobile Phone Charges Inquiry at ¶ 7.15.

[31] *See* for example, the work undertaken by Analysys on behalf of OFTEL in the UK, *at* http://www.analysys.com.

[32] *See, e.g., Petition of Sprint Spectrum L.P. d/b/a/ Sprint PCS, Pursuant to Section 252(b) of the Telecommunications Act of 1996, for Arbitration to Establish an Intercarrier Agreement with Verizon New York*, Case 01-C-0767, *Order Resolving Worldwide Dispute*, New York Public Service Commission (2002); *see also Petition by Sprint Spectrum L.P. d/b/a/ Sprint PCS for arbitration of certain terms and conditions of a proposed agreement with BellSouth Telecommunications, Inc. pursuant to Section 252 of the Telecommunications Act*, Docket 000761, Florida Public Service Commission (docket closed as of 1/11/02).

Therefore, in contrast to fixed networks, call termination requires greater network resources than call origination.

In addition there are fundamental differences in the volume sensitivity of costs of a mobile network compared to a fixed access network. In fixed access networks, cost modelling experiences in many countries reflect that roughly 90 percent of costs are attributable to traffic or subscriber lines – and of that, two-thirds relate to the recovery of the costs of access lines to individual subscribers, and the remaining one-third is traffic sensitive. Typically, operators recover the two-thirds of costs that are associated with subscriber lines from monthly subscriber line charges (supplemented by a universal service fund or subsidy where one exists). This is consistent with US TELRIC modelling. Only the remaining one-third of costs is recovered from per minute network usage charges (of which call termination is one type). Mobile networks, by contrast, have a large component of fixed common costs as a consequence of the need to provide network coverage for all callers (both the network's own subscribers and those calling the network's subscribers) to make and receive calls within the geographical footprint of the network. Vodafone's experience is that this can account for up to half of the total network cost base (depending on circumstances of the individual network). Since these costs are not subscriber-specific, they must be recovered across all services the operators provide, including termination. This is not disputed by any foreign regulator that has considered the matter, although much controversy remains about how this principle is applied.[33]

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[33] Regulatory proceedings in the United States that have considered mobile costs have done so in the context of existing TELRIC rules which prevent operators from recovering non-traffic sensitive costs via interconnection charges. US mobile operators have, therefore, argued that non-traffic sensitive costs are small, but this position appears dictated by cost recovery rules that are inappropriate to a mobile environment. *See Rebuttal Testimony of Randy G. Farrar, Before the Florida Public Service Commission, Docket No. 000761-TP, December 13, 2000* (discussion concerning cell site costs being traffic sensitive). See also *Petition of Sprint Spectrum L.P. d/b/a/*

Lastly, mobile networks have experienced a continuous state of technological transition from analog, to digital, and now to 3G technology platforms. This raises issues about the most efficient choice of technology or 'modern equivalent asset' at any one point in time.

E. In View of the Range of Assumptions Regulators Need to Make, it is Reasonable to Expect a Range of Different Outputs from LRIC Modelling Exercises, Particularly at the Early Stages of the Discipline's Development

In the context of a mobile network, regulators seeking to estimate LRIC need to take a view on:

- whether different call types (*e.g*. originating, terminating, on-net, off-net) constitute different services, or are all part of a 'traffic service.' This question is relevant to, for example, the common costs of certain switching functions. If all traffic is treated as a single service, more costs will be incremental. Most foreign regulators that have considered this issue have adopted this approach. If, however, LRIC is more appropriately calculated for individual call types, there will be significant common costs between these call types;

- whether there is a 'subscription service' capturing the activity of activating and managing subscriptions to the network, irrespective of the amount of traffic generated. This question is relevant to how non-network costs are to be recovered. In the UK, OFTEL identified a subscription service, although the precise allocation of costs to this service is open to some dispute.[34]

- the extent to which the activity of providing a minimum network configuration to allow subscribers to place and receive calls throughout the geographical coverage area of the network (*e.g*. a minimum of base station sites equipped with a minimum equipment configuration) constitutes an incremental cost to traffic or is a fixed common cost. In the UK, Ofcom has taken a view that the fixed common element of such costs is small (limited only to the acquisition and preparation costs of cell sites required strictly for network coverage), with all equipment costs being incremental. Subsequently, however, other European regulators (notably the PTS in Sweden) have concluded that the minimum equipment configuration for each of the coverage cell sites is also part of the fixed common costs of mobile services. Indeed, making such changes to the

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Sprint PCS, Pursuant to Section 252(b) of the Telecommunications Act of 1996, for Arbitration to Establish an Intercarrier Agreement with Verizon New York, Case 01-C-0767.

[34] However, the UK Monopolies and Mergers Commission (MMC) [now the Competition Commission] disagreed with this conclusion in its 1998 inquiry. *See* Competition Commission, *Cellnet and Vodafone: Reports on references under Section 13 of the Telecommunications Act 1984 on the charges made by Cellnet and Vodafone for terminating calls from fixed-line networks*, at ¶ 2.200-2.208 (December 1999) *available at* http://www.competition-commission.org.uk/rep_pub/reports/1999/421cellnet.htm.

model produced on behalf of OFTEL in the UK, it can be demonstrated that the mark-up for fixed and common costs increases from 6 percent to around 25 percent by altering the view of base station costs that are to be treated as necessary for network coverage. PriceWaterhouseCoopers ('PWC'), in a report commissioned by Vodafone, estimated the size of fixed and common costs in three Vodafone operating companies. PWC estimated that the size of fixed and common costs as a proportion of current equipment was 14 percent in Greece, 23 percent in the Netherlands and 45 percent in Spain.[35]

Other issues concern the magnitudes of the costs comprising LRIC for the defined services provided over the defined network. The most significant issues relate to capital costs. The magnitude of capital costs depend on two assumptions -- cost of capital and time profile of capital cost recovery. In particular:

- Most foreign regulatory agencies estimate a weighted average cost of capital (WACC), utilizing the capital asset pricing model (CAPM) for the cost of equity component. The main issue of contention lies in the appropriate value of 'Beta' (the coefficient measuring the degree of co-variation between the future investment returns from the mobile carrier compared to the market generally). Foreign mobile networks make significant investments in the fixed costs of network roll-out, and face variable revenues. In general, it is to be expected that the forward-looking cost of capital will be high in most foreign countries (compared to the US) under greater demand uncertainty (due to lower incomes per capita) and a less developed existing customer base.

- There is a significant divergence of practice among foreign regulatory agencies over methods for determining the most appropriate time profile for capital recovery. The simplest method, used by many regulators, utilizes straight-line depreciation plus the cost of capital applied to the net book value of the assets in each year. This method will tend to front load cost recovery (since, on each asset, depreciation will be constant over time but the cost of capital will decline as the asset is depreciated). Alternative methods use annuity (or levelized) capital recovery, whereby cost recovery is equalized (or levelized) in all years of the assets life. The method may also be refined to 'tilt' the annuity so that recovery reflects purchase price trends in the particular asset. For example, in the case of an asset whose purchase price may be expected to decrease over time (*e.g*. electronic equipment), the annuity will be tilted to give a declining cost recovery in line with the declining value of the replacement asset. Some foreign regulators frequently use this method. The final, and most complex method, is economic depreciation, whereby both the time profile of the cost recovery over the asset life, and the asset life itself, are determined strictly in relation to the net value of the asset in each time period, defined as the difference in the value of the output of the asset less the maintenance cost of the asset in each time period. Cost recovery is positively related to variations in equipment utilization over time, and negatively related to any trend in maintenance costs. Unlike the other methods, the asset's life is endogenized within the calculation, whereby the

[35] The PWC work is included in the Vodafone Public Policy Series No. 1 Pamphlet. *See* Annex E.

asset remains in service as long as its discounted remaining value exceeds its discounted future maintenance costs. This method has been used in the UK.

F. Some Foreign Regulators Allow Mobile Termination Rate Asymmetries to 'Support' New Mobile Entrants

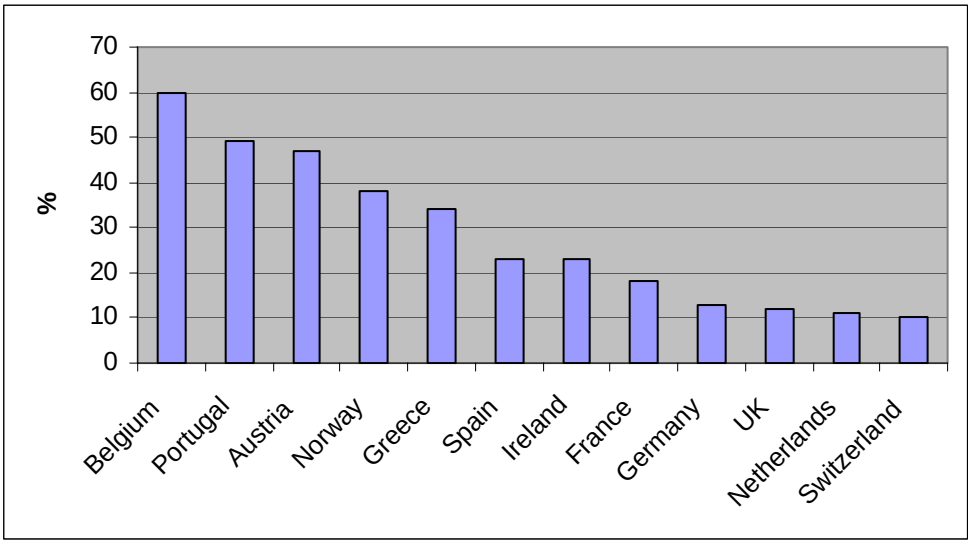
Once the LRIC concept has been defined for all services on the network (and consequently fixed common costs have been conceptually identified), it is necessary to consider the most suitable definition for the network over which the services are provided. Two alternatives exist. The first is to estimate the costs for each individual network operator in a given market. This approach, by its nature, will give cost estimates conditional on that operator's stage of development, market share, and choice of technology. It will also (unless separately identified) be dependent upon that operators' level of operational efficiency.

Vodafone considers this approach to be unsuitable if the object of rate setting in this context is to identify an efficient long-term cost benchmark, at which individual operators can, in the long term, achieve efficient levels of scale and operational practice. This suggests that the most appropriate approach is to develop a generic cost model for each market, allowing inter-operator variation only for factors that constrain that operator's long term cost base. Such factors may include, *inter alia*, cost implications of different spectrum assignments, where operators are unable to swap or otherwise trade spectrum. This approach is adopted by some foreign regulatory agencies, including Ofcom in the UK, who have adopted the position that mobile termination should only differ between operators to the extent that there are unavoidable long term cost differences outside the control of the individual operators, and that the only relevant factor here is spectrum assignments.

However, other foreign regulators, either explicitly or implicitly have taken a different view – often by accepting pre-existing rate differences which arose under the

'old' EU regulatory framework when some, but not all, mobile operators were subject to mobile termination rate regulation (see Figure 4.1).

Figure 4.1: Percentage differences between mobile termination rates within the same national market



Source: Vodafone analysis. Average foreign mobile termination rates for each operator has been calculated using the methodology described in Annex B.

Foreign regulators have generally adopted different standards for different mobile operators because they believe that 'later entrants' have higher costs or otherwise must be allowed to recover higher rates in order to strengthen their position in the domestic mobile market. For example, the European Regulators Group argues:

> NRAs should also take into account that, in the short term, new entrants into the mobile sector, where high initial investments are required, do not benefit from economies of scale (and possibly scope) to the same extent as incumbents.
>
> ….NRAs may decide to allow new entrants to cover their (statically) inefficiently high costs wherever the dynamic advantages from competition are likely to more than outweigh the short-run disadvantages.[36]

Vodafone remains deeply skeptical of such claims. Vodafone has argued to foreign regulators that such differences are unjustified in terms of both incentive regulation and economic efficiency. If smaller foreign mobile network operators are

permitted to raise additional termination premiums by virtue of their small size and higher cost base, they have less incentive to improve efficiency and inefficient entry is being sustained through regulation. We attach, at Annex E, a pamphlet that includes a paper by Professor Stephen Littlechild. This paper provides further data on the magnitude of the rate differences that result from this regulatory treatment and an economic critique of the rationale behind such differences.

As noted below in Section 5.C, Vodafone believes this issue may have particular relevance to the FCC NOI. These differential rates can contribute to the complexity of the intermediary market because it may be difficult both for US carriers and American callers to determine their true costs for terminating traffic in particular countries when multiple termination rates apply as between different networks.

G. There Are Many Reasons Why Foreign Mobile Termination Rates Will Differ Between Countries

In addition, mobile termination rates must be country specific, reflecting a wide range of cost and demand characteristics within countries. At the very least, the cost of mobile termination in any particular country will be a function of:

- Geographical coverage area (*i.e*. coverage obligation relative to the size of the country): network coverage varies considerably between countries, from 99 percent of the land mass in relatively compact countries such as the UK, to less than 50 percent in equally developed but less compact countries. Australia is an example of the latter. Sometimes network coverage obligations will be a specific license requirement of the operator, while in other instances it will be a commercial decision;
- Geographical terrain (*i.e*. physical topography of the landscape): the physical geography of a country can significantly increase the costs of mobile network coverage in ways that are not necessarily correlated with any other factors. For example, Switzerland and Denmark may have similar population densities, but hugely different network build requirements;
- Population distribution (i.e. subscriber and traffic density, urban/rural mix): Urban traffic is more likely to benefit from economies of traffic density on the network, while rural areas will suffer from large coverage costs relative to the number of usage minutes;

[36] European Regulators Group, *ERG Common Position on the Approach to Appropriate Remedies in the New Regulatory Framework*, ERG (03) 30rev1, at p. 115 (2003)..

- Scale of operation (*i.e.* volume of subscribers and traffic): economies of scale will exist to some degree within the central functions of a mobile network;
- Purchasing power (which is a function of company size): larger mobile networks potentially benefit from greater equipment procurement price leverage;
- Range of services offered, including the extent to which data and text services are provided;
- Whether the mobile operator has both 2G and 3G networks, which can share facilities and whether infrastructure sharing between network operators in the same coverage areas (*e.g*. base station masts) is allowed: base stations are the largest component of the network costs, and so any possibilities for site sharing will have significant implications for the overall cost base;
- Allocation of spectrum: Mobile operators with less spectrum (relative to demand) may incur additional network costs in order to make more efficient spectrum use;
- Price paid for spectrum: this will vary significantly between countries, based purely on the spectrum policy adopted in individual countries;
- Type of technology adopted (*e.g*. GSM 900, GSM 1800, CDMA): in the UK OFTEL found it necessary to specifically model the costs of both GSM 1800 and combined GSM 900/1800 networks, with the former suffering from a cost premium of around 12 percent;
- Ratio of peak to off-peak traffic: this will be affected by (a) social factors such as length of the working day or the tradition of a siesta period; and (b) time bands within the country, since countries spreading across multiple time bands will have different time of day profiles;
- Grade of service (*i.e*. acceptable call blocking rates): acceptable blocking rates may differ between countries. It is unreasonable to expect a low income country to engineer its network to the same specifications as a higher income country;
- Wage rates and other employment costs (*e.g*. pensions, national insurance): employment costs differ significantly among countries (especially between low income and high income countries), impacting particularly the civil engineering costs of base station site preparation;
- Land cost (to purchase or rent): land and property costs vary significantly between countries, and this will affect base station site costs;
- Planning rules and regulations for base station masts and antenna: restrictive planning rules in some countries will significantly increase mobile network build costs;
- Depreciation methods: differences in depreciation methods required by either statute or regulation will give differences in annualized capital costs;
- Required rates of return;
- Whether mobile network operators can self-provide transmission links or have to lease lines from fixed operators (and in the latter case the cost of leased lines). This will effect the costs of both the access and core network; and
- The nature of interconnection between networks (*i.e*. the number of points of network interconnection, whether there are any restrictions on their location, whether calls from one mobile network operator have to transit through a fixed network, whether mobile networks have to be all interconnected, or whether mobile networks operators are free to decide optimal interconnection architectures).

Taking account of the range of issues discussed earlier, it is not surprising that even those foreign regulatory agencies that have adopted detailed bottom-up costing methodologies have come to different views on the cost of mobile termination, in the context of their own markets. Vodafone is thus hard-pressed to see how the FCC could be able to engage in a generally-applicable LRIC modelling approach.

H. AT&T's Revised TCP Study Is Not a Framework for Evaluating Whether Foreign Mobile Termination Rates Are Excessive

AT&T's revised TCP study is claimed to provide a proxy for the cost of international termination of traffic to mobiles. Vodafone submits AT&T's revised TCP study is wholly inappropriate for this purpose because it ignores the cost structure of mobile networks and relies upon proxies for the cost of mobile network termination. There are no such things.

Although some criticisms herein could be relevant to the original TCP as applied to fixed lines, their impact is substantively and materially greater in the case of mobile network termination. Thus, while it may have been reasonable to rely upon the original TCP study to evaluate fixed network termination tariffs in foreign countries, it is not the case for mobile.

1. *AT&T's revised TCP study ignores the cost structure of mobile networks*

AT&T's revised TCP fails to take account of the cost structure of a mobile network, particularly the structure of fixed, common, and marginal costs. As noted previously, appreciation of the cost structure is essential in any proper evaluation of mobile prices. Only a marginal or incremental cost can be unambiguously associated with any service. By contrast, allocation of fixed common costs, essential for total cost recovery, can occur in a number of ways, depending on the circumstances of the particular service in question. For example, where prices are regulated, the regulator

may impose a simple cost mark-up formula,[37] whereas where demand is highly elastic, prices may be bid down to a level close to marginal costs, with little or no mark-up for fixed common costs. AT&T's revised TCP study implicitly takes the fixed and common cost allocation that mobile operators use for domestic retail mobile-to-mobile calls and applies this allocation to wholesale mobile termination. But these are quite different customers subject to quite different demand conditions. There is no reason to suppose that this allocation will be appropriate to mobile termination services. And there is no reason to suppose that such a cost allocation would achieve full cost recovery across all services.

2. AT&T's revised TCP study is based on meaningless proxies for the cost of mobile network termination

Not only does AT&T's revised TCP lack a proper appreciation of either the cost structure or the demand structures of mobile networks but the cost proxy used for the domestic mobile network termination component is fundamentally flawed. A critical assumption of AT&T's revised TCP is that the domestic mobile termination costs can be proxied by simple adjustments to the retail price of a foreign domestic mobile-to-mobile call. This is fundamentally flawed.

It would appear that many of the mobile-to-mobile tariffs used by AT&T relate to mobile-to-mobile calls originating and terminating on the same network (on-net mobile-

[37] It is accepted that LRIC will fail to recover the costs of a firm with common costs and so, in competitive markets, a mark-up will be required if firms are to be financially viable in the long term. Most foreign regulators have allowed for the recovery of fixed common costs through a method known as 'Equi-proportional mark-up' (EPMU). Under this scheme fixed common costs that need to be recovered to ensure that the mobile network is not loss-making overall are spread across services in direct proportion to the total LRIC associated with each service. However, most economists would consider that the EPMU approach is an inefficient way of recovering costs and likely to lead to market distortions. Based on well-established economic theory, most economists would contend that the EPMU method will distort prices away from economically efficient levels in the presence of fixed costs and/or externality effects. *See* Annex E. Vodafone Public Policy Series No. 1 *See also* Presentation of Houpis, G. and Valletti, T.M*., Mobile termination: what is the "right" charge?,* International Telecommunications Society 15th Biennual European Conference, Berlin, (September 2004); Presentation of Sandbach, J., *Ramsey Pricing -*

mobile). A complex mix of supply-side (cost) and demand-side factors determines retail prices for mobile services.[38] This is particularly true of mobile-to-mobile calls that originate and terminate on the same network. Both theoretical and empirical evidence demonstrates that the pricing of these calls is used strategically by small networks (*i.e*. those with less than 30 percent of the subscriber base) to gain advantage over their larger competitors. The reasoning behind this is clear. A small network can offer deeply discounted on-net mobile-to-mobile prices (even below cost) without foregoing significant revenue, since the proportion of such calls on its network will be low (on-net calls requiring both the caller and recipient to be subscribers on the same network). Larger competitors will seek to respond and on-net prices will be driven down through competitive dynamics.

The relevance of this to AT&T's revised TCP study is that on-net mobile-to-mobile tariffs may be significantly below the cost of mobile termination, especially in the case of small operators. As an extreme example, the on-net mobile-to-mobile tariff of tele.ring in Austria is 0.8 €cents per minute in both peak and off-peak time periods (1.0 US cent) for contract customers. It is self-evident that half this tariff applied to all originating and termination call segments on a mobile network would not allow full cost recovery (including a share of fixed common costs). At most, a cost of 0.5 US cent per minute (half of tele.ring's 1.0 US cent on-net call charge[39]) may represent a short run marginal cost. But neither the FCC nor any other reputable telecommunications regulator has suggested that short run marginal cost can provide a suitable cost

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vs. – EPMU for Regulation of Firms Operating in Competitive and non-competitive Markets, at the Economics of Electronic Communication Markets Conference, Toulouse (October 2004).

[38] Mobile networks exhibit strong externalities between services originating and terminating on the network, making the network a platform for provision of services in a two-sided market in which the price of a service on one side of the market may be either above or below the cost of the individual service (whether marginal cost or fully distributed cost).

standard for regulated prices. This constitutes a fundamental flaw to the domestic mobile termination component of AT&T's revised TCP study. This is obvious once we consider that on AT&T's own analysis, the 'cost' of termination for many US mobile operators would appear to be close to zero.

AT&T's revised TCP is particularly inappropriate to mobile networks. The FCC could reasonably have adopted this approach during the *Benchmarks* proceeding in light of the generous nature of some assumptions made in the fixed line context. When applied to mobile rates, however, AT&T's revised TCP presents a totally different risk of error for two reasons:

- foreign mobile networks operate in competitive environments, giving a quite different dynamic to cost/price relationships, compared to foreign incumbent fixed line businesses which were the focus of the previous TCP exercise; and
- foreign mobile networks have wholly different cost structures, in which coverage requirements result in fixed common costs, and efficient recovery of these costs takes on far greater significance than can be seen in fixed incumbent networks.

Foreign mobile network operators almost always operate in highly competitive markets. Although terminating services will be regulated in most countries, mobile network operators have the flexibility to competitively price outgoing services. Prices of outgoing services will take account of the nature of consumer demand in a competitive environment. Only marginal cost will be relevant – a very small proportion of any fully distributed cost. This is not true to the same extent in the incumbent fixed networks, which generally operate in monopoly environments. Here, cost based regulation frequently applies to *both* originating and terminating services, providing some validity to the TCP methodology of proxying access network costs by the retail tariff for a local fixed call.

[39] In fact, the cost of an originating or terminating call segment will be greater than half the cost of an on-net call, since certain network components (*e.g*. the mobile switch) will be used only once in both cases (*i.e*. not twice by an on-net call).

The magnitude of fixed common costs (compared to marginal or incremental costs) is also much larger in mobile networks due to the costs of establishing a minimum network presence over the geographical area of coverage. Estimates of fixed common costs in a mobile network are considerably above the general understanding for the equivalent level of fixed common costs in a national incumbent fixed network, where typically at least 90 percent of the cost base can be directly attributable to either traffic or subscriber lines. Any differences in the efficient and competitive recovery of fixed costs between different services – and notably between retail and wholesale services – is therefore likely to be much greater in the case of mobile networks than in fixed. Retail proxies are therefore likely to be a much better fit in the case of fixed networks than in mobile. Indeed, the magnitude of fixed costs in mobile networks means that retail prices cannot be considered a proxy at all.

As a result, Vodafone concludes that AT&T's revised TCP study is wholly inappropriate as a means of evaluating foreign mobile termination charges. Not only is the study methodologically flawed (by ignoring cost and demand structures within the competitive mobile industry), but the practical cost proxies used for the domestic termination component make no sense.

V. OTHER ISSUES RAISED BY THE NOI

The NOI also seeks comment on a number of other issues, and this section provides our views on some of these issues, namely: the relevance of on-net pricing for the analysis of call termination issues; the relevance and impact of integrated carriers for the analysis of call termination issues; and the intermediary market and the issue of 'pass-through' of lower mobile termination rates to US consumers.

A. On-Net Pricing by Foreign Operators Is Not Relevant to US Consumers

On-net pricing has been a characteristic of telecommunications markets for many years -- in both fixed and mobile networks and in RPP and CPP environments. For example, in the United States, the national mobile carriers offer rate plans that include unlimited calls to and from on-net subscribers within a specified local network. For calls to and from the subscriber off the network, airtime charges ranging up to about $0.50 per minute may be incurred depending upon the carrier and the number of bulk minutes included in the rate plan.

Similarly, in foreign markets, on-net call charges are invariably below the termination rates charged to third parties – for both mobile operators like Vodafone and fixed operators like MCI. Regulators have rightly concluded that on-net RPP pricing structures at issue here cannot be directly compared with CPP termination rates – and that different price levels can therefore apply to similar services under different demand conditions. The same holds true with respect to comparisons between RPP and CPP price levels.

The FCC asks whether on-net pricing practices by mobile operators in foreign markets might adversely affect US consumer interests. It is difficult to see how this could be the case, just as it is difficult to see how on-net pricing practices by US mobile operators have any direct relevance to the interests of foreign callers. On-net pricing structures result from competitive pressures in foreign mobile markets and unambiguously enhance the welfare of foreign mobile consumers.[40] They have no relevance to US consumers.

[40] Even if on-net pricing were used by large operators as an exclusionary practice to 'tip' markets, it is difficult to see how such exclusionary conduct could have a direct adverse effect upon US consumers, as opposed to foreign mobile customers. Vodafone observes that there is no evidence that on-net pricing has been employed as an effective exclusionary tactic and a number of important antitrust investigations in Europe have recently concluded that it does not. *See*

B. The Conduct of Integrated Carriers Is Not Relevant to US Consumers

In the absence of any exclusionary effect on US carriers (which we cannot envisage) or particular detriment for US consumers (which we do not find either), Vodafone does not see that the position of integrated foreign fixed and mobile operators has any relevance to the matters being pursued in this NOI.

C. The Intermediary Market and the Issue of 'Pass-Through' Is Highly Relevant to US Consumers and Is an Area in which Little Data Has Been Submitted by Parties to Date

The actions of foreign regulators in reducing mobile termination rates does not in itself mean that US consumers will benefit from lower retail prices for calling international mobiles. Reductions in foreign mobile termination rates require an effectively competitive intermediary market in which movements in costs are accurately reflected in movements in prices faced by all other parties, including the American consumer.

Vodafone participates in the intermediary market of international correspondent relationships as a buyer of international termination services on behalf of its own customers. Our experience suggests that there remain significant imperfections in the operation of this market – deficiencies that we note AT&T and other US carriers do not appear to have addressed at all in their comments on this issue.

Table 5.1 (also provided in Annex B of this submission) shows foreign mobile termination surcharges for a selection of countries and the end-user surcharges by AT&T and MCI for calls to mobiles in these countries. Note that AT&T and MCI surcharges should represent the difference between the mobile and fixed termination rate (and not to the absolute mobile termination rate) since the US carrier will be paying national extension charge as part of the international settlement charge. We would,

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Ofcom, *Suspected margin squeeze by Vodafone, O2, Orange and T-Mobile*, Case : CW/00615/05/03 *available at* http://www.ofcom.org.uk/bulletins/comp_bull_index/comp_bull_ccases/

therefore, expect the surcharge to be about 1-2 cents *below* the mobile termination rate. Yet there is only a weak correlation between the surcharges of the US carriers and foreign mobile termination rates, or, for that matter, between the surcharges of AT&T and MCI themselves. In most instances, the AT&T and MCI surcharges are *higher* than the surcharge in termination rates for calls to mobiles. In our view this illustrates potential problems in the intermediary market that mean that lower foreign mobile termination rates are not being passed-through into lower retail prices for US consumers.[41]

The first difficulty with pass-through in the intermediary market – including 'mobile surcharges' levied by US carriers upon US consumers – appears to be that reductions in foreign mobile termination rates precede movements in intermediary prices, often by many months. Intermediaries, whether foreign or US international carriers, fail to pass movements in mobile termination rates through to their customers for some months, with the result that movements in foreign termination rates increase the margins of the intermediary carriers without any benefit being derived by US consumers.

This is a matter that the FCC might reasonably expect to be resolved in a dynamic, competitive international markets through more rigorous contracting and more dynamic rate review provisions. In practice, many international carriers, including US carriers, are both buyers and sellers of international conveyance and termination services, with the result that 'mutual stickiness' may be a feature of this market. This, however, is speculation in the absence of data that the US international carriers would be well placed to furnish to the FCC.

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closed_all/cw_615/decision.pdf; *see also* Tribunal De Defensa De La Competencia, Ultimas Decisiones *available at* http://www.tdcompetencia.es/frames.asp?menu=9 (in Spanish).

[41] *See* Annex B.

Table 5.1: Current Mobile Termination rates and AT&T and MCI Surcharges (expressed as US cents with exchange rates)

	Mobile Termination Rate Premium (i.e. Mobile Termination Rate less estimated fixed termination rate)	**User Surcharges**			
		AT&T		**MCI**	
			% 'mark-up'		*% 'mark-up'*
Austria	15.2	17	*12%*	21	*38%*
Belgium	16.8	25	*49%*	19	*13%*
France	15.5	22	*42%*	20	*29%*
Germany	16.3	19	*17%*	20	*23%*
Greece	18.6	23	*24%*	25	*34%*
Ireland	12.9	17	*32%*	13	*1%*
Italy	17.7	23	*30%*	19	*7%*
Luxembourg	16.6	13	*-22%*	19	*14%*
Netherlands	16.6	27	*63%*	24	*45%*
Portugal	25.0	24	*-4%*	21	*-16%*
Spain	15.3	19	*24%*	19	*24%*
Denmark	13.4	18	*34%*	16	*19%*
Norway	11.8	16	*36%*	17	*44%*
Sweden	13.4	24	*79%*	19	*42%*
Switzerland	28.1	30	*7%*	27	*-4%*
UK	8.6	22	*156%*	16	*86%*
Japan	11.0	13	*18%*	14	*27%*
New Zealand	9.7	24	*147%*	22	*127%*
Australia	12.2	19	*56%*	19	*56%*
Average	15.5	20.8	*34%*	19.5	*26%*

Source: Vodafone analysis as described in Annex B.

The second difficulty is the lack of rate transparency within the intermediary market, which in turn may result in a lack of transparency in retail charges to American consumers. As noted previously in section 4, some foreign regulators have set different mobile termination rates for different mobile networks within the same market. Aside from the other objections that Vodafone has to this practice, such differences in rates may also exacerbate the lack of transparency within the intermediary market. It is possible, for example, that some foreign carriers may set mobile accounting rates by reference to the *highest* termination rates within a particular national market rather than by reference to the average of such rates. Calculation of average rates will be difficult

for buyers in the absence of information about the distribution of traffic terminating on different networks. There is therefore a risk that US carriers may face higher costs than would be justified by reference to the underlying termination rates which the foreign mobile operators are themselves recovering. A better public policy outcome, in Vodafone's view, would be for foreign regulators to require the same termination rates for all mobile network operators within a particular national market.

A third potential source of confusion concerns differential time of day charges, with the possibility that foreign carriers are setting international accounting rates by reference to peak period charges, while US carriers may be originating traffic from US consumers that falls within the off-peak period of the foreign mobile network. Again, there would appear to be opportunities for intermediaries to exploit differences and lack of transparency in order to sustain margins above those we might expect in a properly functioning intermediary market. Again, these imperfections may persist because they may arise in both directions in bi-lateral relationships, or they may persist for other reasons.

Aside from the wholesale intermediary market, Vodafone has suggested in the past that the FCC may also wish to examine 'retail pass through' by US carriers to consumers. Some foreign regulators have certainly been concerned to ensure that mobile termination rate movements are reflected in retail price movements to end-user consumers and have introduced additional regulatory obligations on fixed network operators to force pass through of lower foreign mobile termination rates.[42] For example the Dutch regulator obligated the fixed line incumbent (KPN) in 2000 to 'pass

[42] Where foreign regulators have relied on competition, they have generally been unconcerned to achieve a 'one for one' pass through, arguing that if the retail market for fixed to mobile calls is effectively competitive then reductions in the costs faced by fixed operators will be passed through in reductions in the overall cost of service to consumers, even if this is not directly observed in fixed to mobile retail price setting.

through' reductions in foreign mobile termination rates to end users.[43] In other markets pass-through have been achieved though commercial negotiation between MNOs and FNOs. In Ireland a 100% pass through obligation was explicitly negotiated between Vodafone Ireland and Eircom (the fixed line incumbent) in the latest contract between the two parties.[44]

VI. CONCLUSION -- ROLE OF THE FCC

If the FCC were to consider action in this matter, Vodafone submits that the Commission would be compelled to establish a rationale for action that supplemented or was in some other way distinctive from that already being advanced by foreign regulators.[45] Since there is no evidence that US callers and carriers are being treated differently from foreign callers to foreign mobiles, it is difficult to see what that rationale might be.

Foreign mobile termination rates are quite different from international fixed-line services to which the FCC has previously applied multilateral 'benchmark' policies. Vodafone has shown that the FCC cannot rely upon simplistic proxies, whether derived from the RPP environment in the United States or AT&T's 'TCP' methodology. 'Cost orientated' termination rates can occupy a reasonable range of values for methodological reasons as well as because of differences in input data. The Commission, therefore, should rely on the expertise of foreign regulators to regulate foreign mobile termination rates and focus on whether US consumers are subject to discrimination.

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[43] This obligation is regulated via a price cap on KPN. KPN's retail tariffs (including fixed to mobile retention) can only increase by inflation. The current price cap expires in 2006. The NRA used a cost-price model in 2000 to calculate the cost price retention for fixed to mobile calls.

[44] *See* Press Release, Vodafone Ireland, *Vodafone Ireland Key Performance Indicators for the Three Month Period to 30 June 2004/Vodafone Ireland Reduces Weekend Mobile Termination Rates by 33%* (Jun. 30, 2004).

Again, provided mobile termination charges for domestic and US-originated calls are non-discriminatory, US carriers will capture the results of this regulatory activity. If cases of blatant discrimination against US consumers or carriers were to arise, Vodafone would consider these to be a matter for bi-lateral action by the FCC or the US Trade Representative.

The benefits of foreign mobile termination rate movements, however, may not be fully transmitted to US callers if the fixed 'intermediary market' functions imperfectly. Vodafone has suggested that this may be the case, although the evidence at present is inconclusive. Vodafone has argued that asymmetric termination rates within particular national markets may add to the complexity of rate setting in the intermediary market, although it is unclear why fixed carriers have not been able to address this and it is equally unclear how the FCC might intervene to improve matters. Exploitation of time of

[45] As Vodafone noted in its comments in the *ISP Reform* proceeding, there is also the issue of extent to which the FCC has jurisdictional power to act on foreign mobile call termination rates. *See* Vodafone Comments in IB Docket No. 02-324, at 14-15, filed Jan. 14, 2003.

day tariff gradients may also mean that US consumers do not always enjoy the benefit of price movements by foreign mobile operators.

Respectfully submitted,

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LIST OF ANNEXES